We claim:

1. A parenteral pharmaceutical formulation comprising

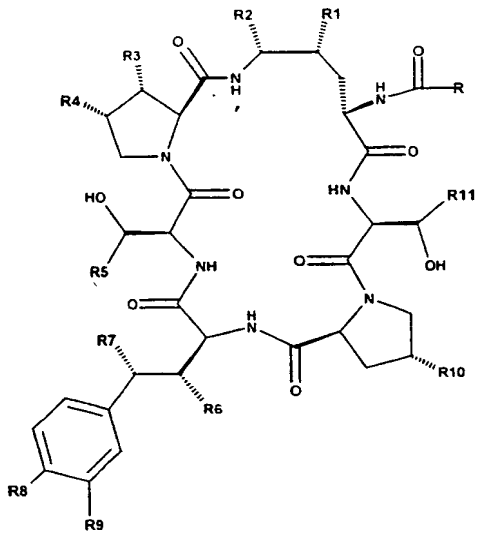
(i) an echinocandin compound, or a pharmaceutically acceptable salt thereof;

(ii) a pharmaceutically acceptable micelle-forming surfactant; and

(iii) a non-toxic, aqueous solvent

wherein said surfactant is present in said formulation at a weight ratio of echinocandin compound to micelle-forming surfactant from about 1:1.75 to about 1:25 and said echinocandin compound is present in an amount greater than or equal to 1 mg/ml.

2. The formulation of Claim 1 wherein said echinocandin compound is represented by the following structure:



wherein:

R is an alkyl group, an alkenyl group, an alkynyl group, an aryl group, heteroaryl group, or combinations thereof;

R_1, R_2, R_3, R_6, R_7, and R_{10} are independently hydroxy or hydrogen;

R_4 is hydrogen, methyl or $-CH_2C(O)NH_2$;

R_5 and R_{11} are independently methyl or hydrogen;

R_8 is -OH, $-OPO_3H_2$, $-OPO_3HCH_3$, $-OPO_2HCH_3$, or $-OSO_3H$;

R_9 is -H, -OH, or $-OSO_3H$; and

pharmaceutically acceptable salts thereof.

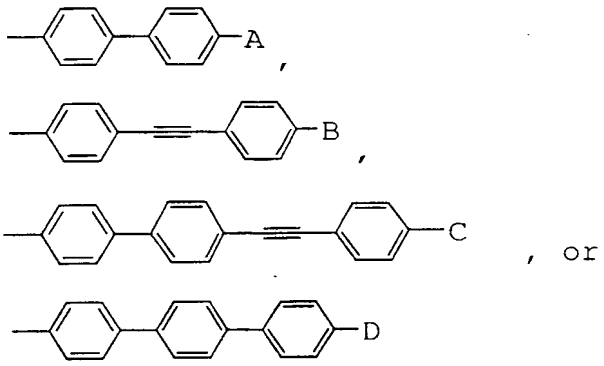
3. The formulation of Claim 2 wherein

R_4, R_5 and R_{11} are each methyl;

R_2 and R_7 are independently hydrogen or hydroxy; R_1, R_3, R_6 and R_{10} are each hydroxy;

R_8 is -OH, $-OPO_3HCH_3$, or $-OPO_2HCH_3$;

R is linoleoyl, palmitoyl, stearoyl, myristoyl, 12-methylmyristoyl, 10,12-dimethylmyristoyl, or a group having the general structure:



, or

where A, B, C and D are independently hydrogen, C_1-C_{12} alkyl, C_2-C_{12} alkynyl, C_1-C_{12} alkoxy, C_1-C_{12} alkylthio, halo, or $-O-(CH_2)_m-[O-(CH_2)_n]_p-O-(C_1-C_{12}$ alkyl) or $-O-(CH_2)_q$-X-E;

m is 2, 3 or 4;

n is 2, 3 or 4; p is 0 or 1; q is 2, 3 or 4;

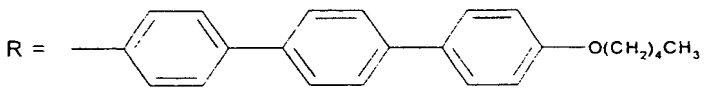
X is pyrrolidino, piperidino or piperazino;

E is hydrogen, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, benzyl or C_3-C_{12} cycloalkylmethyl.

4. The formulation of claim 3 wherein

R_2 and R_7 are each hydroxy;

R_8 is hydroxy; and

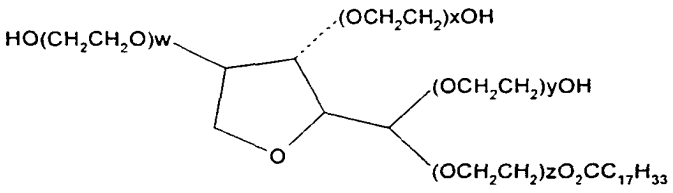


5. The formulation of Claim 1 wherein said micelle-forming surfactant is selected from the group consisting of polysorbates, polyoxyethylene castor oil derivatives, polyoxyethylene stearates, sorbitan trioleate, bile salts, lecithin and combinations thereof.

6. The formulation of Claim 1 wherein said echinocandin compound is present in an amount from about 1 mg/ml to about 50 mg/ml.

7. The formulation of Claim 6 wherein said echinocandin compound is present in an amount from about 1 to about 30 mg/ml.

8. The formulation of Claim 1 wherein said surfactant is represented by the following formula:



wherein x+y+z+w is equal to an integer between 5 and 20.

9. The formulation of Claim 1 wherein said surfactant is present in an amount greater than 1% weight per volume.

10. The formulation of Claim 1 wherein said weight ratio of echinocandin to surfactant is from about 1:2 to about 1:3.

11. The formulation of Claim 1 wherein said solvent is selected from the group consisting of water, ethanol, propylene glycol, polyethylene glycols and mixtures thereof.

12. The formulation of Claim 1 further comprising a stabilizing agent.

13. The formulation of Claim 12 wherein said stabilizing agent is present in an amount from about 0.5% to about 10% by weight per volume.

14. The formulation of Claim 12 wherein said stabilizing agent is present in an amount from about 1% to about 6% by weight per volume.

15. The formulation of Claim 12 wherein said stabilizing agent is selected from the group consisting of mannitol, histidine, lysine, glycine, sucrose, fructose, trehalose, lactose and mixtures thereof.

16. The formulation of Claim 1 further comprising a buffer.

17. The formulation of Claim 16 wherein said buffer is selected from the group consisting of acetates, citrates, tartrates, lactates, succinates and phosphates and amino acids.

18. The formulation of Claim 1 further comprising a tonicity agent.

19. The formulation of Claim 18 wherein said tonicity agent is selected from the group consisting of glycerin, lactose, mannitol, dextrose, sodium chloride, sodium sulfate and sorbitol.

20. The formulation of Claim 18 wherein said tonicity agent is present in amount from about 1 to about 100 mg/ml.

21. The formulation of Claim 18 wherein said tonicity agent is present in amount from about 9 to 50 mg/ml.

22. A freeze-dried formulation comprising

(i) an echinocandin compound, or a pharmaceutically acceptable salt thereof;

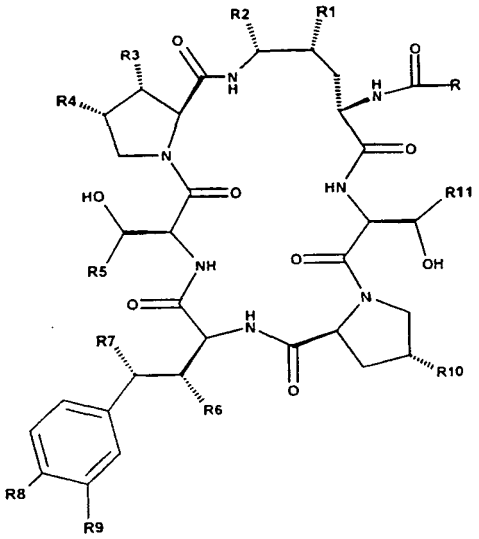
(ii) a pharmaceutically acceptable micelle-forming surfactant; and

(iii) a bulking agent,

wherein said micelle-forming surfactant is present in said freeze-dried formulation in an amount greater than 5% by weight.

23. The formulation of Claim 22 wherein said bulking agent is selected from the group consisting of mannitol, sucrose, trehalose, lactose and mixtures thereof.

24. The formulation of claim 22 wherein said echinocandin compound is represented by the following structure:



wherein:

R is an alkyl group, an alkenyl group, an alkynyl group, an aryl group, heteroaryl group, or combinations thereof;

R_1, R_2, R_3, R_6, R_7, and R_{10} are independently hydroxy or hydrogen;

R_4 is hydrogen, methyl or $-CH_2C(O)NH_2$;

R_5 and R_{11} are independently methyl or hydrogen;

R_8 is -OH, $-OPO_3H_2$, $-OPO_3HCH_3$, $-OPO_2HCH_3$, or $-OSO_3H$;

R_9 is -H, -OH, or $-OSO_3H$; and

pharmaceutically acceptable salts thereof.

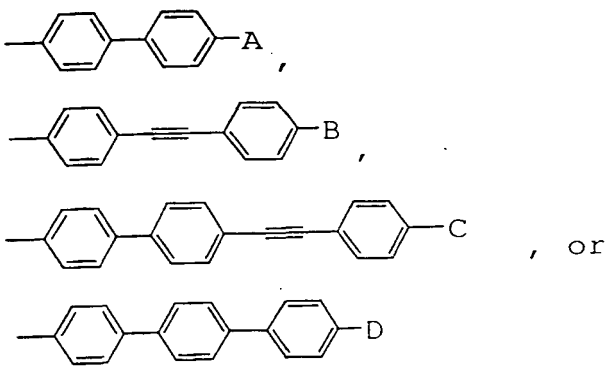
25. The formulation of claim 24 wherein

R_4, R_5 and R_{11} are each methyl;

R_2 and R_7 are independently hydrogen or hydroxy; R_1, R_3, R_6 and R_{10} are each hydroxy;

R_8 is -OH, $-OPO_3HCH_3$, or $-OPO_2HCH_3$;

R is linoleoyl, palmitoyl, stearoyl, myristoyl, 12-methylmyristoyl, 10,12-dimethylmyristoyl, or a group having the general structure:



, or

where A, B, C and D are independently hydrogen, C_1-C_{12} alkyl, C_2-C_{12} alkynyl, C_1-C_{12} alkoxy, C_1-C_{12} alkylthio, halo, or -O-$(CH_2)_m$-[O-$(CH_2)_n$]$_p$-O-(C_1-C_{12} alkyl) or -O-$(CH_2)_q$-X-E;

m is 2, 3 or 4;

n is 2, 3 or 4; p is 0 or 1; q is 2, 3 or 4;

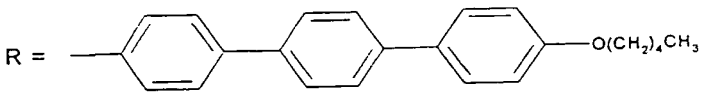
X is pyrrolidino, piperidino or piperazino;

E is hydrogen, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, benzyl or C_3-C_{12} cycloalkylmethyl.

26. The formulation of Claim 25 wherein

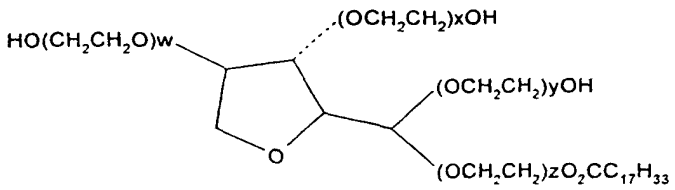
R_2 and R_7 are each hydroxy;

R_8 is hydroxy; and



27. The formulation of Claim 22 wherein said micelle-forming surfactant is selected from the group consisting of polysorbates, polyoxyethylene castor oil derivatives, polyoxyethylene stearates, sorbitan trioleate, bile salts, lecithin and combinations thereof.

28. The formulation of Claim 22 wherein said surfactant is represented by the following formula:



wherein x+y+z+w is equal to an integer between 5 and 20.

29. The formulation of Claim 22 wherein said surfactant is present in said formulation at a weight ratio of echinocandin to surfactant from about 1:1.75 to about 1:25.

30. The formulation of Claim 29 wherein said weight ratio of echinocandin to surfactant is from about 1:2 to about 1:3.

31. A parenteral formulation comprising the freeze-dried formulation of Claim 22 and an aqueous solvent.

32. The formulation of Claim 31 further comprising a stabilizing agent.

33. The formulation of Claim 32 wherein said stabilizing agent is selected from the group consisting of mannitol, histidine, lysine, glycine, fructose, sucrose, trehalose, lactose and mixtures thereof.

34. The formulation of Claim 31 wherein said surfactant is present in said formulation at a weight ratio of echinocandin to surfactant from about 1:1.75 to about 1:25.

35. The formulation of Claim 31 further comprising a buffer.

36. The formulation of claim 35 wherein said buffer is selected from the group consisting of acetates, tartrates, citrates, phosphates and amino acids.

37. A process for preparing a parenteral formulation comprising the step of mixing an echinocandin compound or an echinocandin/carbohydrate complex containing said echinocandin compound and a pharmaceutically acceptable micelle-forming surfactant in an aqueous solvent, wherein said micelle-forming surfactant is present in said formulation at a weight ratio of echinocandin compound to surfactant from about 1:1.75 to about 1:25 and said echinocandin compound is present in an amount greater than or equal to 1 mg/ml.

38. The process of Claim 37 wherein said echinocandin compound is present in amount from about 1 mg/ml to about 50 mg/ml.

39. The process of Claim 37 wherein said echinocandin compound is present in an amount from about 1 mg/ml to about 30 mg/ml.

40. A process for making a freeze-dried formulation comprising in the following order the steps of:

(i) dissolving into an aqueous solvent an echinocandin compound or echinocandin/carbohydrate complex containing said echinocandin compound in the presence of a pharmaceutically acceptable micelle-forming surfactant to form a solution, wherein said surfactant is present in an amount greater than 1% weight per volume of solution;

(ii) sterile filtering said solution; and

(iii) freeze-drying said solution.

41. The process of Claim 40 further comprising the step of adding one or more bulking agents, buffers, stabilizing agents, tonicity agents, or combinations thereof before step (ii).

42. The process of Claim 40 wherein said micelle-forming surfactant is selected from the group consisting of polysorbates, polyoxyethylene castor oil derivatives, polyoxyethylene stearates, sorbitan trioleate, bile salts, lecithin and combinations thereof.

43. A process for preparing a freeze-dried formulation comprising the steps of

(i) buffering a non-toxic aqueous solvent to a pH between 4.0 and 5.5 to form a buffered solution;

(ii) adding to said buffered solution a pharmaceutically acceptable, micelle-forming surfactant;

(iii) cooling the solution from step (ii) to a temperature between 5° and 15°C to form a cooled solution;

(iv) adding a slurry comprising an echinocandin compound or echinocandin/carbohydrate complex and a second non-toxic aqueous solvent to said cooled solution;

(v) sterile filtering said solution from step (iv); and

(vi) freeze-drying said solution from step (v).

44. The process of Claim 43 wherein said temperature in step (iii) is from about 7°C to about 10°C.

45. The process of Claim 43 further comprising the step of adding one or more bulking agents, stabilizing agents, tonicity agents, or combinations thereof before step (v).

46. A parenteral formulation comprising an aqueous solvent and a freeze-dried formulation prepared by the process of Claim 43.

47. A parenteral pharmaceutical product prepared by (i) dissolving into an aqueous solvent an echinocandin compound or echinocandin/carbohydrate complex containing said echinocandin compound in the presence of a pharmaceutically acceptable micelle-forming surfactant to form a solution, wherein said surfactant is present in an amount greater than 1% weight per volume of solution; (ii) sterile filtering said solution; and (iii) freeze-drying said solution from step (ii) in a vial.

48. The product of Claim 47 wherein the preparation of said product further comprising adding a non-toxic, aqueous solvent to said vial after step (iii).

49. The product of Claim 47 wherein the weight ratio of echinocandin compound to surfactant is from about 1:1.75 to about 1:25.

50. A method of treating an antifungal infection in a mammal in need thereof comprising the step of administering to said mammal a parenteral formulation of Claim 1.

51. A method of treating an antifungal infection in a mammal in need thereof comprising the step of administering to said mammal a parenteral formulation of Claim 31.

52. A method of treating an antifungal infection in a mammal in need thereof comprising the step of administering to said mammal a parenteral formulation of Claim 46.